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GRANT NUMBER DAMD17-94-J-4378

TITLE: The Effects of Brief Psychotherapy of Coping with Breast Cancer

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REPORT DATE: October 1997

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	October 1997	Final (1 Oct 94 - 31 Oct 97)

4. TITLE AND SUBTITLE
The Effects of Brief Psychotherapy of Coping with Breast Cancer

5. FUNDING NUMBERS
DAMD17-94-J-4378

6. AUTHOR(S)
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8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200)*

The purpose of this study was to test an intervention designed to facilitate the coping efforts of women diagnosed with Stage I or Stage II breast cancer. Our novel approach tested the effects of *brief* psychotherapy provided by phone. The final sample included 61 women newly diagnosed with breast cancer who were randomly assigned to either the phone treatment or a "standard treatment" condition. Treatment participants received ten therapy phone contacts with psychology graduate students. Therapy focused on cognitive-behavioral treatment and occurred weekly for 1 month and then every-other-week for the next 3 months.

Distress and quality of life measures were collected at pretest, after treatment, and at a 10-month follow-up. The best predictor of distress was coping style: Women who reported more avoidant coping were more distressed. In general, treatment women were satisfied with therapy and felt that they could openly discuss important issues. Therapy outcome data showed no advantage for quality of life outcomes. Treatment women did report improvements in terms of distress, but the differences were significant only for anxiety and confusion. Phone therapy is acceptable, but it may not be powerful enough to strongly influence important outcomes.

14. SUBJECT TERMS	15. NUMBER OF PAGES
Breast Cancer	49
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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Kevin D. McCaul 11/10/97

PI - Signature Date

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The Effects of Brief Psychotherapy on Coping with Breast Cancer

INTRODUCTION

Background

It is well known, and hardly surprising, that many women with breast cancer suffer, both physically and psychologically. Recent treatments have succeeded in increasing life expectancy for many women after diagnosis, but life with cancer often includes psychological difficulties that extend to one's family and persist without intervention (Anderson, 1992).

Fortunately, several studies have shown that psychotherapy (in the broadest sense) reduces suffering and can increase longevity. Perhaps the best known of these studies was conducted by Spiegel and his colleagues (Spiegel & Bloom, 1983; Spiegel et al., 1989). In that study, women with metastatic breast cancer met in a weekly support group over a one-year period. Compared to standard treatment control patients, treatment participants showed lessened pain and a better survival rate. We should note that researchers do not always find a relationship between psychological factors and survival per se. However, the relationship between psychotherapy and quality of life is more convincing, and it is the latter outcome that was of primary interest in this pilot study.

We propose that brief, and thus less expensive, treatment may prove beneficial for improving the quality of life for breast cancer patients. As far as we are aware, there are no experimental trials testing this hypothesis, and this study represents a pilot study to test the value of such an approach.

One advantage of brief therapy is that it provides the opportunity for a therapist to interact with a patient over the phone. Such contact may be particularly important, because it can provide access to care for individuals from rural areas. Rural patients often have problems accessing health care, partly because of the inadequate supply of primary care physicians (U.S. Congress, 1990). Brief, weekly phone contacts, can provide psychotherapy access to women from rural areas.

In summary, previous research suggests that supportive psychotherapy can facilitate coping for women with breast cancer. In addition, brief support can be provided over the phone, thus providing access to women from rural areas of the state. In this research, we studied the effectiveness of treatment in a pilot experiment, with women randomly assigned to a psychotherapy treatment or to a no treatment (i.e., standard treatment) condition. We measured coping, psychological distress, and quality of life.

Purpose

This pilot study was intended to provide preliminary data evaluating an intervention designed to help women cope with Stage I or Stage II breast cancer. Our approach is novel because we are testing the effects of *brief* psychotherapy provided by phone. Thus, we can reach patients from rural areas who have difficulty accessing care.

Design

We initially recruited over 60 women newly diagnosed with Stage I or Stage II breast cancer, and randomly assigned those women in equal numbers to either a treatment or no-treatment (i.e., "standard treatment") condition. Following a baseline assessment, treatment participants received ten therapy phone contacts with psychology graduate students providing the therapy. Therapy was provided weekly for one month and every-other-week for the subsequent three months. Following treatment initiation, we gathered measures 1 month, 4 months, and 10 months later. Assessment included measures of coping, distress, and quality of life.

BODY

Participants

We initially recruited 69 patients to participate, and 56 completed the study through the 10-month follow-up. Eight of the drop-outs stopped participating at the pretest stage; only five dropped out once the study proper began. Some of the analyses described below are based on fewer than 56 women depending on whether we had complete data on every measure at every follow-up period.

Recruitment proceeded as follows: Women newly diagnosed with Stage I or Stage II breast cancer were identified by medical staff or tumor registry, typically at the Roger Maris Cancer Center. Recruitment was also facilitated by medical staff who informed women about the study when they were in the Cancer Center for medical care. Satellite clinics provided some referrals from regional locations.

After women were identified, we typically contacted them by telephone. The purpose of the study was explained and information was provided about informed consent. Once women agreed to participate, they completed baseline measures (either at home or in the clinic), and telephone therapy began the week following return of the questionnaires.

Of the final 61 participants, 30 were diagnosed with Stage I, 28 with Stage II, and 3 with Stage III breast cancer. All participants are Caucasian with the exception of

one Native American. Nearly all (83%) of the participants had completed high school, and 35% had completed a college education. More than half (68%) were married and nearly half (44%) worked full-time outside of the home.

Treatment

As originally planned, we contacted experimental participants ten times. The initial calls, which were once/weekly, focused on obtaining general information regarding the participant's experiences regarding diagnosis and treatment. In subsequent calls, we explored in more depth the participant's beliefs, thoughts, and emotions, in order to provide support and facilitate problem solving. Participants were regularly asked about their mood and anxiety, and relaxation/worry reduction techniques were frequently taught. The content of calls varied as necessary to meet the participant's needs, ranging from discussion of recent activities (e.g., vacations) to facing thoughts of death and dying.

The telephone calls were placed by the therapist at a mutually agreed upon date and time. The length of calls was about 30 minutes. Although the calls were scheduled in advance, therapists frequently found that they had to be flexible about rescheduling the telephone session because of participants' needs (e.g., feeling unwell, children to look after, unexpected guests). When this occurred, the call was rescheduled within a week. For therapist supervision and therapy process analysis, some of the telephone sessions were audiotaped with the participant's consent. Two graduate student therapists were each responsible for approximately equal numbers of clients.

Measures

We gathered several background variables that could predict distress. Demographic variables included age, marital status, working outside the home, and education. Medical variables included cancer stage (I vs. II and III), treatment (lumpectomy vs. modified radical mastectomy), and type of adjuvant treatment (none vs. chemo only vs. radiation or chemo + radiation). Available social support was measured by asking participants who was available for emotional support--who they could talk to when having problems. Response categories included spouse, parent, child, sibling, a friend, and "other". We summed across these sources of support to create a total number of support opportunities.

Coping was measured using the Coping Response Indices (R), a measure that provides three measures of coping style: active cognitive coping, active behavioral coping, and avoidance coping (Moos, Cronkite, Billings, & Finney, 1983). Participants completed the measure for how they were coping with the stress of cancer rather than their "typical" style. Internal consistency for the subscales (alpha coefficient) ranged from .43 (avoidance) to .53 (active cognitive) to .76 (active behavioral).

Distress was measured with the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). Participants complete the inventory for their feelings during the previous week. The scale assesses the intensity of six moods: anxiety, depression, vigor, fatigue, anger, and confusion. Internal consistency ranged from .63 (confusion) to .93 (fatigue), with an average across the six subscales of .80.

Quality of Life was measured using the Medical Outcomes Scale (MOS) short-form (Stewart, Hays, & Ware, 1988). This 20-item scale represents six concepts: physical, role, and social functioning, and mental health, health perceptions, and pain. Internal consistency ranged from .70 (physical functioning) to .84 (mental functioning), with an average across the subscales of .74.

Results

We present the results in three sections. First, we address how baseline (pretest) measures predict distress (see McCaul, et al., under review). These data are important, because they tell us which women may be most at risk for negative outcomes resulting from diagnosis and treatment. Second, we present a description of our therapy outcome data. Finally, we describe participants' reactions to phone therapy.

Predicting Distress. For the background variables, we either computed correlations (e.g., for age) or performed analyses of variance (e.g., for disease stage), using the individual MOS and POMS scores as the outcome variables. These analyses were done separately for the cross-sectional data collected at baseline and prospectively, predicting the 4-month outcomes from baseline assessment. In general, these analyses sometimes revealed significant associations at pretest. But there was little consistency across dependent measures, and the reliable associations typically disappeared at the 4-month follow-up. The following list summarizes these analyses for each of the background predictors.

- We computed 31 correlations between age and the outcome measures, and only two were significant. Younger age predicted poorer mental health at 4 months on the MOS but less fatigue on the POMS.

- ANOVAS were used to compare women who were married (n = 48) versus those who were not (n = 13). In general, the means for these comparisons showed that married women reported a poorer quality of life. Significant differences were obtained concurrently (at baseline) for physical functioning, mental functioning, pain, reported stress, and fatigue. A similar pattern of means was evident predicting the 4-month outcomes, but none of the differences were significant at that time.

- We compared women who worked outside the home versus those who

did not, using *t* tests. No reliable differences appeared at either time period.

- More education was related to poorer functioning at baseline on two MOS measures: pain and social functioning. These correlations were not significant at 4-months.

- ANOVAS were used to compare women who were diagnosed with either Stage I (n = 30) or Stages II and III (n = 31). The means for these two groups of women were similar--there was no hint that women with a more severe diagnosis were experiencing a poorer quality of life or more distress. Indeed, the only significant differences showed just the reverse: Women diagnosed with Stage I cancer reported *more* confusion and *higher* levels of avoidant coping than women with Stage II/III cancer. The avoidant coping difference was maintained at 4 months.

- ANOVAs comparing cancer treatments (lumpectomy vs. modified radical mastectomy) showed no trend that the more severe treatment produced a poorer quality of life, and there were no significant differences at either time period.

- ANOVAs were used to compare the three adjuvant treatments (none vs. chemo only vs. radiation or chemo + radiation); the analyses showed no significant differences.

- Available social support was related concurrently to 3/6 MOS outcomes and none of the POMS variables. Interestingly, more available social support was related to *lower* quality of life (rs = -.37 with physical functioning, -.27 with role functioning, and -.32 with pain). Prospectively, available social support predicted two MOS outcomes, again in the counter-intuitive direction. More available social support was related to poorer physical functioning and more fatigue.

It is reasonable to conclude that the background variables we collected were not good predictors of either quality of life or psychological distress. However, one variable--avoidant coping--did prove to show some prospective power.

Table 1 presents correlation coefficients, using the three coping scales to predict distress and quality of life at baseline (cross-sectional) and prospectively over 4 months. As the table shows, only avoidance coping was consistently related to quality of life. The negative relationships indicate that a greater use of avoidance coping was associated with poorer quality of life--these relationships were significant for four of six scales concurrently, though none prospectively. No coping-quality of life relationships were significant for the active methods of coping.

Table 1
Correlations Between Coping and Outcome Measures

	Coping--Cross-Sectional			Coping--Prospective		
	Behavioral	Cognitive	Avoidance	Behavioral	Cognitive	Avoidance
Quality of Life Outcome						
Physical	--	--	-.26	--	--	--
Role	--	--	-.42	--	--	--
Social	--	--	-.49	--	--	--
Mental	--	--	-.50	--	--	--
Health	--	--	--	--	--	--
Pain	--	--	--	--	--	--
Profile of Mood States						
Anger	--	--	.62	--	--	.52
Depression	.27	--	.57	--	--	.47
Fatigue	--	--	.52	--	--	.46
Active	--	--	-.30	.30	--	--
Anxiety	.33	.30	.44	--	--	--
Confusion	--	--	--	--	--	.38

Note. Only significant ($p < .05$, two-tailed) correlations are included in the table.

Avoidant coping was even a stronger predictor of psychological distress. Greater avoidance coping predicted greater distress both cross-sectionally and prospectively. Interestingly, the few reliable correlations with active coping were in the same direction--greater coping was associated with more distress.

Therapy Outcome. Repeated measures analyses of covariance were conducted to assess intervention effects at four and ten months after therapy initiation. Baseline measures served as the covariate. Table 2 presents the covariate-adjusted means for both conditions at both follow-up periods. The means suggest that therapy participants reported less stress than controls at four months but slightly more at ten months, an interaction that was reliable, $F(1,51) = 4.48$, $p = .04$. The means also were higher for participants' reports of behavioral and cognitive coping and lower for avoidant coping, but none of the analyses of coping produced reliable effects, all $ps > .20$.

The means in Table 1 show that therapy participants exhibited consistent improvement compared with controls on the POMS subscales. At four months, the means favored therapy participants on all POMS subscales except depression and, by the 10-month follow-up, the means for therapy participants were better on every POMS subscale. These differences approached statistical significance for two subscales. Therapy women reported less anxiety, $F(1,48) = 3.34$, $p = .07$ and

confusion, F (1,48) = 3.15, p = .08. No Condition X Time interactions were significant.

The means on the quality of life (MOS) scales, shown in Table 2, reveal few between group differences, but the analyses did produce two significant Condition X Time interactions. One interaction, for physical roles, resulted because at four months, the therapy group reported more problems with physical role recovery, a difference that disappeared by ten months, F (1,51) = 6.29, p = .02. The second interaction, for mental health, showed the opposite pattern: Therapy participants were doing better at four months but worse at ten months, F (1,51) = 4.12, p = .05.

Table 2. Adjusted Means for Therapy and Control Participants 4 and 10 months

	4-months		10-months	
	Therapy	Control	Therapy	Control
Stress	7.5	8.5	8.2	7.4
Cognitive coping	27.8	27.8	28.9	26.7
Behavioral coping	34.5	32.6	31.5	30.8
Avoidant Coping	11.4	11.8	11.2	12.0
POMS: Anger	4.3	5.6	4.8	6.5
POMS: Depression	6.2	6.0	6.4	7.5
POMS: Fatigue	8.5	8.6	7.0	9.4
POMS: Active	14.9	13.6	14.0	13.1
POMS: Anxiety	2.9	3.3	2.9	3.6
POMS: Confusion	2.0	2.5	2.0	3.0
MOS: Physical	69.9	86.0	83.4	82.2
MOS: Role	71.0	86.3	85.9	85.1
MOS: Social	80.0	86.9	91.9	94.9
MOS: Mental	76.3	72.7	74.3	79.2
MOS: Health	71.9	66.3	76.3	72.6
MOS: Pain	72.7	65.7	76.9	68.3

Note. Higher scores = more stress and more reported coping. On the POMS, higher scores = poorer functioning (except for the active subscale). On the MOS, higher scores = better functioning (100 is ceiling).

Phone Therapy. It is important to ask whether the women receiving phone therapy found it to be acceptable. In general, the answer to this question was "yes". On written scales, women reported that they were able to reveal their true feelings on the phone (*M* = 4.58, with 1 = "never" and 5 = "always) and that they were comfortable talking on the phone (*M* = 3.50, with 1 = very uncomfortable; 4 = very comfortable).

We also asked several open-ended questions. Only a few women (4/24 or 17%) would have preferred face to face rather than phone contacts. The three most important things women reported receiving were being able to talk out their feelings, hearing how others experienced the disease, and obtaining ideas for how to cope with breast cancer. Finally, when asked what they would change, more than half reported "nothing". Some women would have preferred more frequent contacts, and being able to control the timing of phone contacts.

CONCLUSIONS

We offer three important observations derived from this study.

(1) With one important exception, the background variables collected at pretest failed to predict quality of life or distress of women with breast cancer. The exception, a measure of avoidant coping, predicted both kinds of outcome measures at pretest and was associated with reported distress at 4 months.

Many of the women in our study did *not* report significant emotional upset or lowered quality of life. Therefore, it would make sense to select for treatment those women who are most likely to need help. We propose that women engaged in significant avoidant coping may be a likely group.

(2) Phone therapy is acceptable to patients.

(3) It is not clear whether brief phone therapy, at least as offered here, is effective. However, because most women reported satisfaction with phone therapy, and because the means for most measures favored the therapy group, we suggest that telephone therapy has merit and can offer a time- and cost-efficient way of reaching women who may not otherwise have access to such therapeutic care.

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FINAL REPORT

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Sandgren, A.K., & McCaul, K.D. (1996, October). Telephone therapy and coping with breast cancer. Paper presented at the 3rd World Congress of Psycho-Oncology, New York.

McCaul, K.D., & Sandgren, A.K. (1997, November). Telephone therapy and coping with breast cancer. Poster presented at the Department of Defense Breast Cancer Research Program Meeting, Washington, D.C.

We have completed two manuscripts (enclosed), and we are working on a third.

McCaul, K.D., Sandgren, A.K., King, B., O'Donnell, S., Branstetter, A., & Foreman, G. (under review). Predicting adjustment to breast cancer. North Dakota State University and the Roger Maris Cancer Center.

Sandgren, A.K., McCaul, K.D., King, B., O'Donnell, S., & Foreman, G.. (under review). Telephone therapy for breast cancer patients. North Dakota State University and the Roger Maris Cancer Center.

Sandgren, A.K., McCaul, K.D., & Foreman, G. (in progress). A case by case examination of coping with breast cancer: Who adjusts? North Dakota State University and the Roger Maris Cancer Center.

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Running Head: Adjustment and Breast Cancer

Predicting Adjustment to Breast Cancer

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Summary

This study examined possible predictors of adjustment to breast cancer. Sixty-one women participated soon after they were diagnosed with Stage I or Stage II breast cancer. Measures were gathered then and four months later. Predictor variables included aspects of the disease and treatment process and reported coping behavior. The most consistent predictor of distress and, to a lesser extent, quality of life, was avoidant coping: Women who reported more avoidant coping were more distressed. These data fit well with most previous research and suggest one way of identifying women who may be more at risk for special difficulties coping with the diagnosis of breast cancer.

Predicting Adjustment to Breast Cancer

Nearly 50,000 women in the United States will be newly diagnosed with breast cancer in 1997. Although all these women will suffer, some will experience sufficient distress to warrant formal psychological treatment. The purpose of this paper is to test variables that could be related to the distress levels experienced by women just diagnosed with breast cancer. If we can find such variables, we can characterize those women who are more at risk for psychological and life difficulties (Bloom and Kessler, 1994; Glanz and Lerman, 1992).

A few studies have identified some variables that predict distress. Vinokur, Threatt, Vinokur-Kaplan, & Satariano (1990), for example, analyzed the time course of recovery, concluding that anxiety and depression peak rapidly after breast cancer diagnosis and then gradually decline over a one-year period. Of course, time is not a variable that is useful for predicting which women are at greater risk. As for psychosocial variables, the most likely candidate may be how women cope with the disease. Carver et al. (1993) interviewed 59 breast cancer patients at the time of diagnosis and followed them over a year-long period. Compared with pessimistic persons, optimists were less distressed at every measurement period. In addition, women who reported using the coping strategies of acceptance and a sense of humor were less distressed than women who reported using denial and disengagement. Similarly, Stanton

and Snider (1993) discovered that cognitive avoidant coping was a strong predictor of high distress and low vigor among 30 cancer patients followed from prebiopsy until after surgery. Stanton and Snider concluded that "Avoidance, even over a brief period, may be maladaptive when the stressor is severe and potentially chronic" (p. 22).

Although these two recent studies suggest that avoidant coping generally will have negative effects, other studies suggest just the opposite. Indeed, Glanz and Lerman (1992) reviewed the literature and concluded that avoidant coping and denial can be beneficial, especially during active treatment. They reasoned that during active treatment, patients have less control over their care, and avoidance would therefore be a reasonable strategy to cope with treatment side effects. However, avoidant coping may purchase relief at a subsequent cost. We need to follow women over time to learn the ultimate costs and benefits of different coping strategies.

At this time, only a handful of published studies has followed women after diagnosis with breast cancer. For this study, we recruited women immediately after diagnosis with either Stage I or II breast cancer. We collected data concerning distress and quality of life at this time and approximately four months later. Predictor variables included aspects of the disease and its treatment and coping. The study addressed the question: Can we identify those women who suffer the greatest distress in

the face of breast cancer diagnosis and treatment?

Method

Participants

We initially recruited 69 women. Eight of these women subsequently dropped out of the study: One died of a myocardial infarction, four reported that they did not have sufficient time to participate, and three simply failed to return questionnaires. The final sample included 61 women initially diagnosed with Stage I (n = 30) or Stage II (n = 31) breast cancer. The sample ranged in age from 30-82, with a mean of 51.2 (sd = 12.5). They were highly educated, with only six (10%) having less than a high school college education and 17 (28%) having completed a college degree. One woman was Native American; all others were Caucasian. The mean income level was in the $25,000-$35,000 range.

Procedure

We initially recruited participants to take part in a treatment study for women just diagnosed (within 3 months) with Stage I or Stage II breast cancer.[1] When recruited, most participants had undergone surgery and initiation of adjuvant treatment (chemotherapy, radiation). We explained that women go through many adjustments and that we were interested in learning about these experiences over time. Eight possible participants were not interested in the study. Recruited participants typically completed baseline measures at home and returned them by mail. This procedure

was then repeated 4 months later.

Measures

Predictors. We gathered several background variables that could predict distress. Demographic variables included age, marital status, and education. Medical variables included cancer stage (I vs. II), treatment (lumpectomy vs. modified radical mastectomy), and type of adjuvant treatment (none or tamoxifen only vs. chemotherapy or radiation or both).

Coping was measured using the Coping Response Indices (R), a measure that provides three measures of coping style: active cognitive coping, active behavioral coping, and avoidant coping (Moos, Cronkite, Billings, & Finney, 1983). Participants completed the measure for how they were coping with the stress of cancer rather than how they "usually" coped with stress. Internal consistency (alpha coefficient) for the subscales, computed at the first measurement period, ranged from .43 (avoidance) to .53 (active cognitive) to .76 (active behavioral).

Outcomes. Distress was measured with the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). Participants completed the inventory for their feelings during the previous week. The scale assesses the intensity of six moods using 5-point response scales ("not at all" = 0; "extremely" = 4). The moods were anxiety, depression, vigor, fatigue, anger, and confusion. Internal consistency ranged from .63 (confusion) to .93 (fatigue), with an average across the six subscales of .80. Following

Carver et al. (1993), an overall measure of distress was also computed which averaged ten items from the scales measuring anxiety, depression, and anger.

Quality of Life was measured using the Medical Outcomes Scale (MOS) short-form (Stewart, Hays, & Ware, 1988). This 20-item scale represents six areas: physical, role, and social functioning, and mental health, health perceptions, and pain. Internal consistency ranged from .70 (physical functioning) to .84 (mental functioning), with an average across the subscales of .74.

Results

Table 1 presents the means for the coping and outcome measures. As the table shows, the mean values for all quality of life and POMS scores improved over the 4-month, pretest-posttest interval. Significant differences, using dependent t tests, are shown in Table 1.[2]

Insert Table 1 about here

To examine predictors of distress, we either computed correlations (e.g., for age) or performed analyses of variance (e.g., for disease stage), using the individual MOS and POMS scores as the outcome variables. These analyses were done separately for the cross-sectional data collected at baseline and prospectively, predicting the 4-month outcomes

from baseline assessment.

Demographic Predictors

Age failed to predict any of the 13 outcome measures at baseline. Age was significantly and negatively related to two outcomes four months later: mental health (quality of life) and fatigue. Younger women reported poorer mental functioning (r = .30) and more fatigue (r = .29). Although age was only weakly related to distress, the direction of the relationships--younger aged women reporting more distress--is consistent with previous research (cf. Stanton & Snider, 1993).

Analyses of Variance (ANOVAS) were used to examine marital status, comparing married (n = 48) to single (or divorced) women (n = 13). Overall, the means for these comparisons showed that married women reported a poorer quality of life. Significant baseline differences were obtained for physical functioning (r = .31), mental functioning (r = .25), and pain (r = .29). A similar pattern of means was evident for the POMS scores, but a significant difference was obtained only for fatigue (r = .30). None of these differences was reliable for the prospective analyses.

Education levels were negatively related to two variables at baseline but none prospectively. Greater education was associated with poorer social functioning (r = .37) and greater reported pain (r = .26).

Treatment Variables

Cancer Stage differences were tested using ANOVAS to compare

women who were diagnosed with either Stage I vs. II breast cancer. The means for these two groups of women were similar; women with a more severe diagnosis were not experiencing a poorer quality of life or more distress. Indeed, the only significant difference was just the reverse: Women diagnosed with Stage II cancer reported less confusion than women with Stage I cancer (r = .35).

Possible treatment differences were tested using ANOVAs to compare women who underwent a lumpectomy vs. a modified radical mastectomy. The means showed no trend that the more "severe" treatment produced a poorer quality of life, and there were no significant differences on any outcome measure.

Adjuvant treatment differences were examined using ANOVAs to compare less invasive (e.g., tamoxifen) to more invasive adjuvant treatments (e.g., chemotherapy). Although the means were in the direction one would expect, with the less dramatic treatments associated with better adjustment, none of the analyses revealed a significant difference.

Coping

Table 2 presents correlation coefficients, using the three coping scales to predict distress and quality of life concurrently at baseline and prospectively over 4 months. As the table shows, avoidant--but not behavioral or cognitive coping--was consistently related to quality of life. The negative relationships show that a greater use of avoidant was

associated with poorer quality of life--these relationships held for four of six scales concurrently but were not significant for any subscales prospectively.

Insert Table 2 about here

Avoidant coping was even a stronger predictor of distress. Greater avoidance predicted greater distress both cross-sectionally and prospectively. Interestingly, the few reliable correlations with active coping were in the same direction. More active coping was associated with more distress.

Other analyses

The internal consistency of the 8-item avoidant scale was low (.44), so we conducted some additional analyses with it. Specifically, we split the scale into avoidant cognitive activities (e.g., "kept my feelings to myself") versus avoidant behavioral activities (e.g., "drinking more"). We then examined the correlations between these separate subscales with quality of life and distress. The pattern of means was identical to that produced by the scale as a whole, and the subscales were not differentially related to the outcomes.

One additional set of analyses was conducted to test whether avoidant coping predicted changes in distress. We addressed this

question by computing partial correlations between baseline avoidant coping and 4-month POMS scores, after adjusting for baseline POMS scores. Because of missing data, these analyses included only 45 women. With this reduced statistical power, the partial correlations were significant or nearly so ($p < .07$) for three POMS scales: depression ($r = .37$), fatigue ($r = .28$), and confusion ($r = .27$). In each case, engaging in more avoidant coping over the 4-month interval predicted greater distress.

Discussion

Before discussing the findings for avoidant coping, it is worth briefly discussing other variables that were unrelated to distress and quality of life. In particular, three medical variables failed to relate to quality of life and distress. First, cancer stage was unrelated to adjustment. Recall, however, that the women in this study were diagnosed with either Stage I or II breast cancer, reducing the variability in adjustment that could be associated with more immediately life-threatening diagnoses. Second, medical treatment did not affect adjustment--women who had a lumpectomy were no different from those who underwent a mastectomy. Interestingly, this outcome is common in the literature. Although breast conserving treatment may have benefits in some areas (e.g., a more favorable body image), data do not suggest that the less radical surgery reduces overall distress (Glanz & Lerman, 1992). Finally, the type of adjuvant treatment did not produce differences in this study. The lack of difference here could

partly be attributable to problems with power and overlap of treatments. The different treatments ranged from nothing except lumpectomy, to tamoxifen, radiation, chemotherapy, and all possible combinations of these treatments. A much larger study would be needed to identify differences between these treatments.

Of all the variables that we examined, only one consistently predicted distress: avoidant coping. This finding converges with data from the two most recently published studies concerning this issue (Carver et al., 1993; Stanton & Snider, 1993), though each of those studies used different measures of avoidant coping. Thus, evidence from three different research programs now suggests that avoidant coping predicts poorer adjustment to breast cancer, conferring some measure of generalizability to our results.

It is important, nevertheless, to be cautious about these findings. In particular, all three studies just mentioned relied on mostly middle- to upper-class, white samples, a problem that plagues the breast cancer literature (Glanz & Lerman, 1992). Women of this socioeconomic status may have high levels of coping resources available (cf. Hobfoll, Dunahoo, & Monnier, 1995). It is possible that other variables will predict adjustment for women with fewer resources upon which to draw.

Two other caveats deserve mention. First, avoidant coping predicted POMS subscales well but was associated with quality of life

scores only concurrently--not prospectively. It is not clear why this occurred, but one possibility is that quality of life scores were almost uniformly high at the 4-month follow-up. A reduced range in these scores may have obscured any coping-quality of life differences. Second, all of our outcome data were based solely on self-reports. Relating POMS scores to other measures (e.g., the views of observers) would be worthwhile. Anderson et al. (1994) do suggest that higher distress on the POMS may predict immune function.

Despite these reasons for caution, we believe that accumulating evidence is pointing to avoidant coping as a strong predictor of poor adjustment. Why might this be so? Our data do not provide an answer to this question, but theoretical speculation suggests a possibility. Specifically, Pennebaker (1993) has shown that emotional inhibition--avoiding discussion of a traumatic experience--has negative emotional and physiological consequences. In brief, inhibition takes work and has costs. If part of an avoidant coping strategy includes inhibition of thinking about and discussing the traumatic experience of breast cancer, then Pennebaker's work predicts the negative emotional consequences that we observed in this study. A recent cross-sectional study of women with advanced breast cancer also supports this notion. Classen, Koopman, Angell, and Spiegel (1996) reported that greater emotional expressiveness, as opposed to emotional control, was associated with better adjustment.

What are the practical implications of these findings? We suggest two. First, avoidant coping becomes one means of identifying women at risk for poor adjustment. As investigators have noted (e.g., Anderson, 1992), many women who are diagnosed with breast cancer are amazingly resilient and cope well with their own support networks. We do not have empirically valid predictors of poor adjustment (Glanz & Lerman, 1992): Avoidant coping may be such a predictor. Second, if avoidant coping has negative effects, then we can speculate that the obverse should be true--dealing with the trauma of breast cancer should have positive effects. This does not necessarily mean that active coping per se will be effective, and our data show no advantage for active cognitive or behavioral coping. Instead, we would suggest that emotional expression--thinking and talking about this traumatic experience may have positive benefits (Pennebaker, Colder, & Sharp, 1990). Expression--not inhibition--could be one key to therapies for women who are suffering most from the trauma of breast cancer.

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Footnotes

[1] We will not present treatment study in this paper; those data will be part of a manuscript that follows women for approximately one year after diagnosis. It is important to note here, however, that the treatment involved 3 months of brief cognitive-behavior therapy (10 sessions) delivered by telephone to half the participants who were randomly assigned to treatment. At the 4-month follow-up, no reliable treatment-control differences emerged. We conducted all of the analyses reported here after controlling for experimental assignment, and it made no difference in any of the results.

[2] Significant results are reported for findings of $p < .05$, two-tailed, unless otherwise noted. For significant results obtained from analysis of variance, we computed r as a measure of effect size (see Rosenthal, 1984), allowing for easier comparisons of effects across types of analyses and measures.

Table 1. Means and SDs for Predictor and Outcome Variables Over Time

	Baseline		Follow-up	
Coping	(n = 61)		(n = 51)	
Behavioral**	37.43	(6.27)	33.93	(7.55)
Active Cognitive**	29.66	(4.33)	27.92	(3.87)
Avoidance	12.14	(2.71)	11.58	(3.03)
Quality of Life				
Physical**	66.26	(19.1)	78.50	(22.2)
Role**	54.51	(33.7)	79.50	(33.8)
Social	79.67	(21.1)	82.80	(23.2)
Mental	69.57	(15.7)	74.32	(13.6)
Health**	60.66	(19.5)	68.70	(16.8)
Pain**	57.78	(27.2)	70.50	(25.6)
Profile of Mood States				
Anger	5.37	(3.07)	5.04	(5.70)
Depression	7.76	(7.05)	5.98	(5.48)
Fatigue**	11.14	(7.19)	8.65	(6.44)
Active**	11.22	(5.21)	14.16	(5.29)
Anxiety	3.08	(1.51)	3.08	(1.12)
Confusion	2.70	(2.02)	2.30	(1.98)
Average Distress**	7.45	(5.62)	5.64	(4.47)

Note. Standard deviations are in parentheses.

**Pretest-posttest differences significant ($p < .05$).

Table 2. Correlations Between Coping and Outcome Measures

	Coping--Cross-Sectional			Coping--Prospective		
	Behavioral	Cognitive	Avoidance	Behavioral	Cognitive	Avoidance
Quality of Life Outcome						
Physical	--	--	-.26	--	--	--
Role	--	--	-.42	--	--	--
Social	--	--	-.49	--	--	--
Mental	--	--	-.50	--	--	--
Health	--	--	--	--	--	--
Pain	--	--	--	--	--	--
Profile of Mood States						
Anger	--	--	.62	--	--	.52
Depression	.27	--	.57	--	--	.47
Fatigue	--	--	.52	--	--	.46
Active	--	--	-.30	.30	--	--
Anxiety	.33	.30	.44	--	--	--
Confusion	--	--	--	--	--	.38
Distress	.28	--	.63	--	--	.58

Note. Only significant ($p < .05$, two-tailed) correlations are included in the table. The lower power (i.e, fewer subjects) for the prospective side of the table partly explains why there are fewer reliable relationships with the Quality of Life measure.

Running Head: Therapy and Breast Cancer

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Telephone Therapy for Breast Cancer Patients

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A grant from the U.S. Army supported this research (DAMD17-94-4378). Thanks to employees of the Roger Maris Cancer Center for supporting the project, Ann Branstetter for serving as a therapist, and Chris Geisler for data analysis. Direct reprint requests to Kevin D. McCaul, Department of Psychology, North Dakota State University, Fargo, ND 58105. Phone: 701-231-7072; Fax: 701-231-8426; E-Mail: MCCAUL@Badlands.Nodak.Edu.

Abstract

We tested the value of cognitive-behavior therapy delivered by phone in a study of 53 patients diagnosed with Stage I or II breast cancer. The therapy, administered by psychology graduate students in ten sessions, began immediately after diagnosis and continued for four months. Measures taken at baseline, and at 4-month and 10-month follow-up intervals, included psychological distress, perceived stress, coping, and quality of life. Across time, both therapy and control women reported reduced stress and improved quality of life. Improvements in distress were also observed, although not for anxiety, anger, depression, or confusion. Most therapy participants liked the telephone treatment, but they only showed modest improvement compared with control women, reporting less anxiety and confusion (ps < .08). The discussion addresses possible reasons for why telephone therapy failed to produce stronger effects.

Telephone Therapy for Breast Cancer Patients

Accumulating evidence shows beneficial effects of psychological interventions on the emotional and functional adjustment of breast cancer patients (1,2). However, because most interventions use a variety of techniques (e.g., behavior therapy, cancer education, social support), we know little about what types of therapy work best. This question is particularly important because of issues that will arise as managed care becomes more prevalent. How long does therapy need to be? What therapy components are crucial? Can effective therapy be delivered by para-professionals?

In this study, we tested the effectiveness of brief psychotherapy delivered by psychology graduate students using the telephone. Phone therapy is potentially useful largely because it addresses the issue of access. In particular, many women who live in rural areas do not have ready access to support groups or therapists (3). The phone therapy in the present study focused on coping attempts--both successes and difficulties. In addition, the therapists provided cognitive behavior therapy.

Telephone therapy has not been extensively tested, and we are unaware of any published evaluations of such therapy for breast cancer. Some studies do describe the use of telephone therapy for other problems. Swinson et al. (4), for example, provided ten weeks of behavior therapy via the telephone to patients having panic attacks associated with agoraphobia. Therapy was successful and comparable to results achieved by in-person treatment. In the context of breast cancer, Polinsky, Fred, and Ganz (5) set up a social work case management telephone program for newly diagnosed breast cancer patients. They focused on education, monitoring the

physical and emotional effects of cancer treatment, and providing emotional support, information, and referral. The therapy was cost efficient, and clients were satisfied, but no outcome data were provided. Mermelstein and Holland (6) reported two case studies describing telephone therapy for cancer patients. Again, psychotherapy by telephone was acceptable, but no outcome data were reported.

This study evaluated the effects of telephone therapy for women newly diagnosed with Stage I or II breast cancer. We provided ten therapy sessions spread across four months. The structured intervention focused on four areas: providing support, teaching coping skills, managing anxiety and stress, and helping to solve patient-generated problems. Because of the treatment focus on emotional support, we expected the treatment to reduce psychological distress and perceived stress, and to improve quality of life.

Method

Participants and Procedure

We recruited 62 women with Stage I or Stage II breast cancer through Roger Maris Cancer Center MeritCare, a tertiary cancer treatment center serving rural eastern North Dakota and western Minnesota. Women diagnosed within 3-4 months with Stage I or II breast cancer were eligible and were randomly assigned to the therapy or control conditions. During a 15-min. recruitment phone call, women were told about the study requirements--completing questionnaires over ten months. Therapy women also were given a short description of the phone therapy. At this stage, 17 women declined to participate--seven randomized to the control condition and 10 randomized to the

therapy condition. Comparisons of these 17 women to those women who agreed to participate showed that the decliners were significantly older as a group, [participant M = 51.59; decliner M = 69.2, t (68) = 6.27, p < .01]. However, there were no differences between the seven control women and ten therapy women who declined participation.

Participants first completed informed consent and baseline measures. For experimental women, telephone therapy then began the week following return of the questionnaires. Questionnaires were mailed to all women at 1-, 4- and 10-month intervals.[1] The data presented here come from 53 of the original 62 participants, 24 therapy and 29 control participants. Four women failed to complete measures at some intervals (and thus could not be used for the repeated measures analyses), and five women dropped out altogether during the study. Of the 53 participants with complete data, 27 were diagnosed with Stage I and 26 with Stage II breast cancer. All participants were Caucasian except for one Native American. Nearly all (92%) completed high school, and 30% completed a college education. Most participants (79%) were married; 8% were divorced and 11% were single. Thirty-four women (64%) reported working outside the home. Age ranged from 30-82 (M = 51.5). Only four women reported a household income of less than $10,000 per year.

The most common type of breast cancer was infiltrating ductal carcinoma (70%). Thirty-five participants had a modified radical mastectomy, and 17 had lumpectomies. One woman was undergoing chemotherapy and radiation before surgery. All but five women received adjuvant treatment: chemotherapy (42%); radiation (13%); chemotherapy and radiation (15%); and hormone therapy (21%). All of our participants

who received adjuvant therapy were in the midst of such treatment during the study, but all had completed chemotherapy and radiation before the 10-month follow-up.

Measures

Predictors. Coping, measured using the Coping Response Indices (R), provides three subscale scores: active cognitive coping, active behavioral coping, and avoidance coping (7). Participants completed the measure for how they were coping with the stress of cancer rather than their "typical" style. Baseline internal consistency for the subscales (coefficient alpha) ranged from .40 (avoidance) to .56 (active cognitive) to .78 (active behavioral). Distress, measured with the Profile of Mood States (POMS; 8), assessed six moods: anxiety, depression, active, fatigue, anger, and confusion. Internal consistency ranged from a low of .63 (confusion) to a high of .93 (fatigue), with an average across subscales of .80. Stress (9), assessed perceptions of stress experienced in the previous month on four items (alpha = .76). Quality of Life, measured with the Medical Outcome Scale (MOS), short-form (10), included 20 items to produce six scores: physical, role, and social functioning, mental health, physical health, and pain. Internal consistency ranged from a low of .67 (physical functioning) to a high of .87 (mental functioning), with an average of .76.

Intervention and Therapists

Treatment participants received up to ten telephone calls (M = 9). Therapy was delivered once a week for four weeks and then every other week for six more sessions. Phone sessions lasted up to 30 minutes, averaging 20-25 minutes. The initial call focused on getting to know the participant, asking her to begin telling her story about

breast cancer, and scheduling future calls. Then, therapy addressed four factors: providing support, teaching coping skills, managing anxiety and stress, and helping to solve patient-generated problems. Therapists were trained to use cognitive restructuring, encourage emotional expression, provide nonspecific support, and teach problem solving and relaxation. To facilitate supervision and monitor consistency, some phone sessions were audiotaped. After every call, the therapists recorded the content of the sessions. Patient-generated problems accounted for 27% of the issues addressed in therapy; negative mood accounted for 22%, and coping 19%. The most frequently used therapy technique (25% of the recorded techniques) was cognitive therapy (especially normalization), followed by emotional expression (22%) and nonspecific support (e.g., active listening, validating feelings; 19%).

Two female clinical psychology M.S.-candidates conducted the therapy, each working with a similar number of participants. Each therapist received an 8-hour orientation to breast cancer, provided by a clinical psychologist, cancer nursing staff, and a recovering breast cancer patient. Throughout the study, therapists met once weekly for individual supervision from a Ph.D. clinician and once weekly together with research and clinical supervisors to review and standardize therapy procedures.

Results

Repeated measures analyses of covariance were conducted to assess intervention effects at four and ten months after therapy initiation. Baseline measures served as the covariate. Table 1 presents the covariate-adjusted means for both conditions at both follow-up periods. The means suggest that therapy participants

reported less stress than controls at four months but slightly more at ten months, an interaction that was reliable, F (1,51) = 4.48, p = .04. The means also were higher for participants' reports of behavioral and cognitive coping and lower for avoidant coping, but none of the analyses of coping produced reliable effects, all *ps* > .20.

Insert Table 1 about here

The means in Table 1 show that therapy participants exhibited consistent improvement compared with controls on the POMS subscales. At four months, the means favored therapy participants on all POMS subscales except depression and, by the 10-month follow-up, the means for therapy participants were better on every POMS subscale. These differences approached statistical significance for two subscales. Therapy women reported less anxiety, F (1,48) = 3.34, p = .07 and confusion, F (1,48) = 3.15, p = .08. No Condition X Time interactions were significant.

The means on the quality of life (MOS) scales, shown in Table 1, reveal few between group differences, but the analyses did produce two significant Condition X Time interactions. One interaction, for physical roles, resulted because at four months, the therapy group reported more problems with physical role recovery, a difference that disappeared by ten months, F (1,51) = 6.29, p = .02. The second interaction, for mental health, showed the opposite pattern: Therapy participants were doing better at four months but worse at ten months, F (1,51) = 4.12, p = .05.

Time Effects

We tested for time effects, collapsing across conditions, using a repeated

measures analysis of variance with time (baseline, 4-month, 10-month scores) as the independent variable. As the means reveal (see Table 2), the trend across nearly all measures was for participants to improve, with most gains coming between the baseline and 4-month measurement periods. This period represents the time during which most women ended active medical treatment. The MOS means are particularly striking: Women improved on every subscale.

Insert Table 2 about here

A few exceptions to this general pattern of improvement are also revealed in Table 2. First, avoidant coping did not decline significantly (overall $p = .45$). Second, non-significant changes on the POMS were seen for measures of anxiety, depression, anger, and confusion ($ps > .28$). Although slight improvement was seen at four months for depression, this trend was reversed at ten months.

Satisfaction with Therapy

Therapy satisfaction measures were obtained at 4- and 10-month follow-ups. At four months, women reported a high degree of comfort on the telephone, with 11 women (46%) stating they were "comfortable" and 12 (50%) being "very comfortable". When asked whether they could disclose personal information, 11 women (46%) said that they usually revealed thoughts and feelings and 13 (54%) reported that they always revealed thoughts and feelings. Four women (17%) said they would have preferred face-to-face contact, but 20 (83%) said that face-to-face interaction was unnecessary. Nineteen women (79%) reported that they learned suggestions that

helped them feel better and 15 (63%) found it helpful to receive information regarding how women in similar circumstances cope. The most common suggested change pertained to lack of control over the timing of the call. At ten months, only one woman reported that the therapy had been of little or no help. Three (13%) found it helpful and supportive only at the time, six (25%) noticed helpful effects for a few weeks following therapy, and 15 (63%) noticed positive benefits over time.

A cancer nursing line was available to participants at the Roger Maris Cancer Center. We coded nursing line calls in four ways: (a) asking for blood counts, (b) health problems (e.g., nausea), (c) psychological concerns (e.g., depression), and d) other questions or requests (e.g., rescheduling treatment). Overall, 28 of 53 women used the nursing help line at least once. The therapy women (M = 5.3) used the nursing line significantly more often than control women, (M = 1.9), t (51) = 2.86, p = .006. T-tests, conducted on each type of call, failed to produce significant differences. However, the largest mean difference was for health changes or problems (Ms = 4.2 and 2.0 for the therapy and control group, respectively), t (18) = 1.68, p = .11. Only five calls (out of 180) were made for psychological concerns.

Discussion

This paper reports the first systematic evaluation of phone therapy for breast cancer patients. The data show that therapy can be delivered successfully by telephone to women who are dealing with the effects of breast cancer. The women who participated in the phone therapy were satisfied with the experience and felt they had benefitted from it. These data fit well with observations made in other studies (5).

The more important question, however, may be whether phone therapy helps coping. Our data showed that women in both groups experienced lowered stress and improved quality of life over time. The only consistent advantage for therapy participants was that, compared to control women, they reported better psychological status on the POMS. However, the differences were small, approaching conventional statistical significance for only two subscales: anxiety and confusion. The POMS data also differed from the Quality of Life findings--no differences favoring the therapy participants emerged on the latter measures. Finally, therapy women used the nurse help line more frequently than control women; conceivably, they became more proactive in their health management because of the telephone therapy.

Why were the therapy-control differences so weak? Several possible explanations deserve consideration. One possibility is that there actually were no therapy effects, and the modest anxiety and confusion differences were due to chance effects or demand. However, recall that the POMS means for all subscales favored treatment participants--the anxiety and confusion differences were not anomalies. Another possibility is that phone therapy is effective, but aspects of the present study prevented a strong demonstration of that effectiveness. This alternative is bolstered by two observations. First, women in both conditions showed strong improvement on the quality of life scales; it would have been difficult to obtain differences on some of these measures because they were close to ceiling. Second, our sample sizes--in retrospect--were modest. For the POMS depression measure, for example, power analysis showed that the final sample size provided a 60% chance of detecting a true difference.

Given that many, if not most women will improve without therapy (1), demonstrating therapy effects either may depend on very large sample sizes or selecting women most at risk for negative outcomes (cf., 11).

Another general explanation for the weak treatment effects is that phone therapy, at least as we constructed it, is a weak treatment. One could argue that face-to-face interaction is crucial for the therapy experience, that graduate students do not have the capability to deliver this kind of supportive therapy effectively, or that the therapy content itself was ineffective. Interestingly, Helgeson (12) recently reported the results of an important study strongly suggesting that supportive therapy is ineffective whereas cancer education produces positive effects. The phone therapy in this study definitely focused on the former approach.

We believe that it is worth continuing to explore phone therapy despite the possibility that it may be ineffective. Anecdotal evidence from our phone recordings showed that some women talked with ease about personal matters such as their sexual concerns and body image disturbances, because the phone seemed to "buffer" them from possible embarrassment they might have experienced in person. Other women found the phone conducive to discussing deep fears and worries about their mortality; learning that such topics can be addressed over the phone is important. Because most women also reported satisfaction with phone therapy, and because the means for most measures favored the therapy group, we suggest that telephone therapy has merit and can offer a time- and cost-efficient way of reaching women who may not otherwise have access to such therapeutic care.

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Table 1. Adjusted Means for Therapy and Control Participants 4 and 10 months

	4-months		10-months	
	Therapy	Control	Therapy	Control
Stress	7.5	8.5	8.2	7.4
Cognitive coping	27.8	27.8	28.9	26.7
Behavioral coping	34.5	32.6	31.5	30.8
Avoidant Coping	11.4	11.8	11.2	12.0
POMS: Anger	4.3	5.6	4.8	6.5
POMS: Depression	6.2	6.0	6.4	7.5
POMS: Fatigue	8.5	8.6	7.0	9.4
POMS: Active	14.9	13.6	14.0	13.1
POMS: Anxiety	2.9	3.3	2.9	3.6
POMS: Confusion	2.0	2.5	2.0	3.0
MOS: Physical	69.9	86.0	83.4	82.2
MOS: Role	71.0	86.3	85.9	85.1
MOS: Social	80.0	86.9	91.9	94.9
MOS: Mental	76.3	72.7	74.3	79.2
MOS: Health	71.9	66.3	76.3	72.6
MOS: Pain	72.7	65.7	76.9	68.3

Note. Higher scores = more stress and more reported coping. On the POMS, higher scores = poorer functioning (except for the active subscale). On the MOS, higher scores = better functioning (100 is ceiling).

Table 2. Means (and SDs) on Measures, Collapsed Across Participants

	Baseline		4 months		10 months	
	M	SD	M	SD	M	SD
Stress*	8.9	3.0	8.1	2.7	7.7	2.9
Cognitive Coping*	29.6	4.5	27.8	3.8	27.8	5.5
Behavioral Coping*	37.0	6.4	33.4	7.5	31.0	7.8
Avoidant Coping*	12.1	2.6	11.6	2.9	11.6	3.1
POMS: Anger	5.1	4.2	5.0	5.5	5.7	6.5
POMS: Depress	7.3	6.4	6.0	5.3	7.0	7.7
POMS: Fatigue*	10.7	6.9	8.6	6.3	8.5	6.8
POMS: Active*	11.2	5.2	14.1	5.1	13.3	5.2
POMS: Anxiety	3.0	1.6	3.1	1.1	3.3	1.6
POMS: Confusion	2.7	2.0	2.3	2.0	2.7	2.2
MOS: Physical*	65.6	19.1	78.5	22.1	82.6	19.9
MOS: Role*	55.7	31.6	79.3	33.1	85.4	28.8
MOS: Social*	79.3	20.1	83.8	22.9	93.6	13.5
MOS: Mental*	69.9	15.4	74.4	13.4	77.1	16.6
Health*	61.8	19.5	68.9	16.5	74.3	14.7
Pain*	57.1	26.1	68.9	25.9	72.2	24.8

Note. Higher scores = more stress and reported coping. On the POMS, higher scores = poorer functioning (except for the active subscale). On the MOS, higher scores = better functioning. *indicates a significant time effect ($p < .05$).

Footnotes

[1] We do not present the 1-month data in this paper because we had more missing data during that period; in retrospect it was too soon after the baseline measurement period to collect meaningful data.

[2] Analyses comparing therapy and control participants at baseline showed two significant differences. First, therapy participants were more hostile (M = 6.39) than control participants (M = 4.04), F (1, 50) = 4.14, p = .05. Second, therapy participants reported better physical functioning on the MOS (M = 71.9) than control participants (M = 60.3), F (1,51) = 5.19, p = .03.